THE THREAT OF OIL & GAS POLLUTION

Tennessee

Methane, the primary component of gas, is an invisible, odorless greenhouse gas that is a powerful driver of climate change—87 times as powerful as carbon dioxide during the time it remains in the atmosphere.[1] The oil and gas sector is the largest source of methane in the U.S., leaking or intentionally venting large quantities of this dangerous pollutant into our air every day. In 2014, the oil and gas industry emitted over 9.8 million metric tons of methane, a number 34% higher than previous estimates.[2] The near-term climate impact of these emissions is equal to the pollution caused by more than 200 coal-fired power plants over 20 years.

Along with methane, oil and gas facilities often release other air pollutants that can harm our health, including formaldehyde, benzene, acetaldehyde, and ethyl benzene. These toxins can cause cancer, respiratory symptoms, anemia, brain damage and birth defects, eye irritation, and blood and neurological disorders.

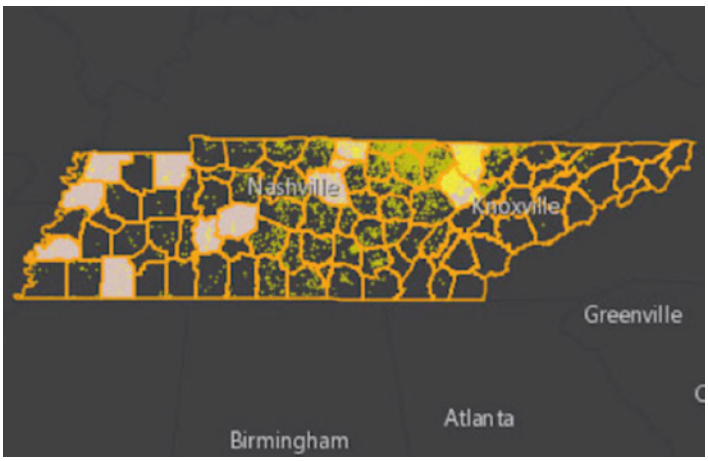
THE THREAT RADIUS

Peer-reviewed studies have documented higher levels of harmful air pollutants in and around areas with oil and gas production activity, and have shown that oil and gas facilities are the source of the excess pollution. Research indicates links between risks and/or prevalence of disease and proximity to facilities.[3] The half mile "threat radius" is a very conservative estimate of the area within which higher levels of toxic pollution are seen, and the distance within which health impacts have most clearly been correlated with the presence of oil and gas facilities.[4]

There are currently 12.4 million people living within a half mile of one of 1,193,118 active oil and gas wells, compressors, and processors in the United States. In total, 184,578 square miles are covered by the threat radius[5], which includes 11,543 schools and 639 medical facilities. Nationwide, 238 counties in 21 states face a cancer risk that exceeds EPA's one-in-a-million threshold level of concern.[6]

OIL & GAS THREATENS TENNESSEE

More than 350,000 Tennesseans—over 5% of the state's population—live within the half mile threat radius of one of the state's 15,952 methane-emitting oil and gas facilities. Encompassed in the over 3,000 square miles covered by the threat radius are five hundred schools and almost forty medical facilities, putting thousands of the state's most vulnerable residents at risk.



MAP: OILANDGASTHREATMAP.COM/THREAT-MAP/TENNESSEE

The Appalachian Basin, which covers portions of several states, including Tennessee, was the fifth highest methane-emitting oil- and gas-producing basin in 2014, emitting 3,455,036 metric tons of carbon dioxide equivalent from 76,800 wells—a rate of 41 metric tons per well.[7]

THE NUMBERS[8]

TOTAL POPULATION Living in the Threat Radius (within a half mile of a facility)	357,574
TOTAL NUMBER of Active Oil and Gas Wells, Compressors, and Processors	15,952
NUMBER OF COUNTIES that Exceed EPA's Cancer Risk Level of Concern	0
NUMBER OF SCHOOLS in the Threat Radius	501
NUMBER OF MEDICAL FACILITIES in the Threat Radius	38
SQUARE MILES COVERED by the Threat Radius	3,102

STRONG FEDERAL STANDARDS ARE KEY

On May 12, 2016, the Environmental Protection Agency (EPA) finalized the first-ever federal standards addressing new and modified sources of methane pollution from the oil and gas sector. These standards require, among other things, that companies regularly monitor for and repair leaks.[9] The EPA expects this rule to cut 510,000 tons of methane pollution from oil and gas facilities and equipment, the emissions equivalent of 11 coal-fired power plants or taking 8.5 million cars off the road every year.[10] These standards will also significantly impact public health by curbing emissions of smog-forming volatile organic compounds (VOCs) and toxic air pollutants.

The 2016 standards were an important first step, but in 2018, nearly 90% of methane emissions will come from existing sources not covered by this rule.[11] Strong methane standards for both new *and existing* sources are key to the Administration's ability to meet its Paris climate commitments to reduce greenhouse gas emissions 26-28% below 2005 levels by 2025.[12] Therefore, the EPA must develop strong and effective standards for existing sources as soon as possible, both to meet its legal commitments and to protect public health and welfare. **Without strong standards on existing sources, millions of people—iincluding the more the 357 thousand in Tennessee within the threat radius—will continue to be at risk.**

COMMON-SENSE SOLUTIONS ARE READILY AVAILABLE

Thankfully, common-sense solutions exist not only to clean-up and fix methane leaks, but to boost local economies as well. More than 500 locations in 46 states are already manufacturing the equipment and providing the services needed to reduce methane pollution, **including one company headquarters, sales location, and two service facilities Tennessee.** These businesses are helping to grow the local economy by creating highly skilled, good-paying jobs.[13]

ENDNOTES

1 http://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5_Chapter08_FINAL.pdf
2 https://www3.epa.gov/climatechange/Downloads/ghgemissions/US-GHG-Inventory-2016-Main-Text.pdf
3 http://ehp.niehs.nih.gov/1306722/
4 http://oilandgasthreatmap.com/about/threat/
5 http://oilandgasthreatmap.com/threat-map/
6 http://www.catf.us/resources/publications/files/FossilFumes.pdf
7 https://cdn.americanprogress.org/wp-content/uploads/2016/06/20070044/MethanePollution-report.pdf
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9 https://www.epa.gov/newsreleases/epa-releases-first-ever-standards-cut-methane-emissions-oil-and-gas-sector
10 https://www.epa.gov/newsreleases/epa-releases-first-ever-standards-cut-methane-emissions-oil-and-gas-sector
11 https://www.edf.org/sites/default/files/methane_cost_curve_report.pdf
12 https://www.whitehouse.gov/the-press-office/2015/03/31/fact-sheet-us-reports-its-2025-emissions-target-unfccc
13 https://www.edf.org/sites/default/files/us_methane_mitigation_industry_report.pdf

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APPENDIX

TN Counties	Total Population	Threatened Population	Number of Facilities	Threatened Schools	Threatened Medical Facilities	Threatened Square Miles	Other Risks
Davidson County	626,681	71,663	68	32	20	44.74	
Rutherford County	262,604	29,448	69	12	0	44.20	
Williamson County	183,182	26,986	76	6	0	50.49	
Scott County	22,228	18,623	2,124	36	1	328.79	
Putnam County	72,321	18,173	242	18	1	73.35	
Overton County	22,083	15,393	3,010	31	1	269.34	
Sumner County	160,645	15,044	267	7	0	89.93	
Maury County	80,956	10,779	100	13	0	65.37	
Fentress County	17,959	10,410	2,017	35	1	297.88	
Morgan County	21,987	9,402	2,209	16	0	294.80	
Cumberland County	56,053	9,381	226	14	0	87.47	
Montgomery County	172,331	9,225	20	2	0	12.25	
Shelby County	927,644	7,758	10	5	0	6.52	
Clay County	7,861	5,956	1,205	33	2	186.19	
Franklin County	41,052	5,832	40	6	0	16.23	
Campbell County	40,716	5,659	311	13	1	93.88	
Macon County	22,248	5,229	135	10	0	63.09	
Robertson County	66,283	5,118	106	7	0	53.56	
Lincoln County	33,361	5,113	83	10	3	38.49	
Warren County	39,839	5,037	107	5	0	43.09	
Pickett County	5,077	4,673	1,490	30	0	133.09	
Wilson County	113,993	4,515	47	1	0	33.03	
White County	25,841	4,312	98	5	1	49.69	
Smith County	19,166	4,086	73	10	1	37.57	
Jackson County	11,638	3,081	222	20	1	78.55	
Giles County	29,485	2,639	49	12	0	33.17	
Anderson County	75,129	2,628	459	10	0	77.81	
Dickson County	49,666	2,588	67	8	0	32.84	
Madison County	98,294	2,587	7	2	0	5.50	
Carroll County	28,522	2,478	4	2	0	3.14	
Grundy County	13,703	2,470	86	5	0	37.23	
Hamilton County	336,463	2,194	5	1	0	1.77	
Marshall County	30,617	2,193	43	6	0	26.23	
Coffee County	52,796	2,167	113	8	0	40.11	
Rhea County	31,809	2,115	33	2	1	14.94	
Bradley County	98,963	1,782	2	1	2	1.57	
Henry County	32,330	1,702	16	2	0	9.31	
Cheatham County	39,105	1,660	25	1	0	14.81	
Cannon County	13,801	1,541	36	8	0	19.78	
Bedford County	45,058	1,152	32	4	0	18.94	
Henderson County	27,769	1,059	11	5	0	7.71	
Claiborne County	32,213	1,044	198	6	0	40.21	
Hawkins County	56,833	955	35	4	0	16.34	
Benton County	16,489	871	5	0	0	4.04	
Houston County	8,426	844	6	1	1	4.27	
Bledsoe County	12,876	819	9	2	0	6.04	
Trousdale County	7,870	660	16	0	0	10.10	
Wayne County	17,021	645	10	2	0	7.85	

APPENDIX, CONT.

TN Counties	Total Population	Threatened Population	Number of Facilities	Threatened Schools	Threatened Medical Facilities	Threatened Square Miles	Other Risks
Roane County	54,181	644	4	0	0	3.09	
Decatur County	11,757	477	11	4	0	6.30	
Lawrence County	41,869	459	12	1	0	5.46	
Knox County	432,226	452	2	0	0	1.43	
DeKalb County	18,723	436	17	2	0	12.47	
Obion County	31,807	435	24	1	0	13.46	
Stewart County	13,324	402	16	3	0	9.14	
Hancock County	6,819	374	66	1	0	12.78	
Van Buren County	5,548	358	19	2	0	13.74	
Hardeman County	27,253	318	9	0	1	6.64	
Fayette County	38,413	302	23	6	0	12.09	
Grainger County	22,657	236	3	0	0	2.65	
Moore County	6,362	228	4	2	0	3.11	
Lake County	7,832	221	12	1	0	5.99	
Perry County	7,915	210	11	1	0	7.90	
Greene County	68,831	204	5	2	0	3.15	
Sevier County	89,889	196	2	1	0	1.57	
McNairy County	26,075	193	4	0	0	1.80	
Lauderdale County	27,815	177	5	1	0	3.05	
Blount County	123,010	160	1	0	0	0.79	
Marion County	28,237	156	9	1	0	7.43	
Meigs County	11,753	145	5	1	0	3.41	
Tipton County	61,081	133	2	0	0	1.57	
Haywood County	18,787	119	3	0	0	1.66	
Hardin County	26,026	116	8	0	0	4.51	
Gibson County	49,683	98	9	1	0	4.83	
Loudon County	48,556	97	1	0	0	0.79	
Sequatchie County	14,112	81	2	0	0	1.37	
Hickman County	24,690	64	8	0	0	4.12	
Chester County	17,131	62	3	0	0	2.36	
Union County	19,109	57	1	0	0	0.93	
Humphreys County	18,538	56	13	0	0	6.43	
McMinn County	52,266	56	2	0	0	1.57	
Lewis County	12,161	43	3	0	0	2.36	
Dyer County	38,335	35	3	0	0	2.11	
Cocke County	35,662	26	1	0	0	0.70	
Jefferson County	51,407	25	2	0	0	0.80	
Weakley County	35,021	24	5	1	0	3.33	
Crockett County	14,586	8	0	0	0	0.24	
Hamblen County	62,544	2	0	0	0	0.09	